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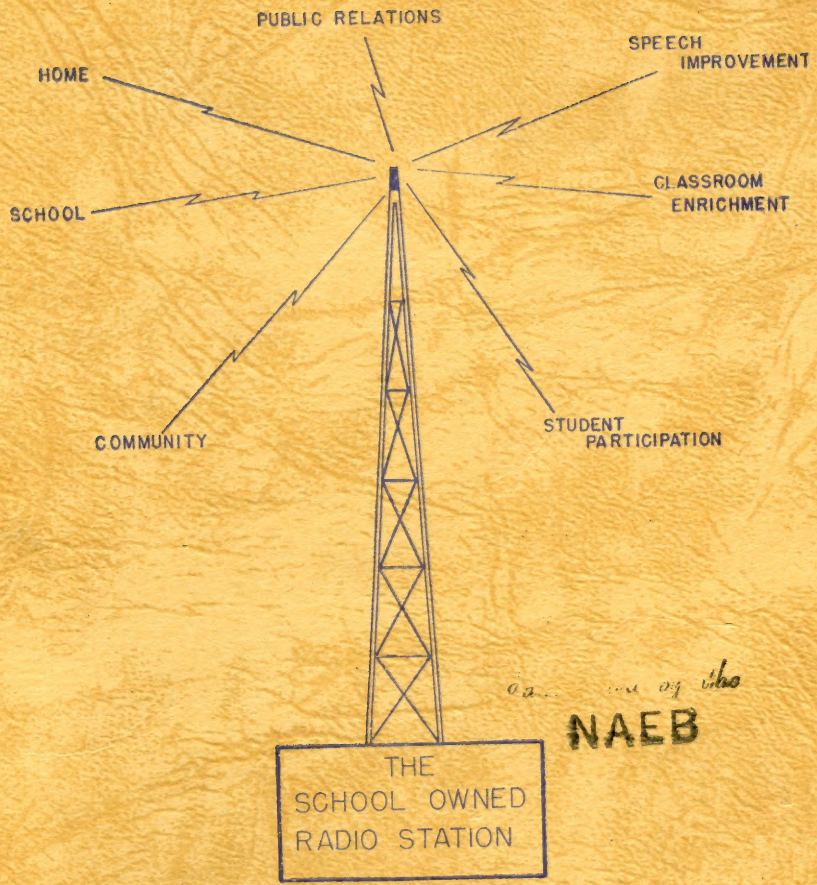

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Low Power FM Radio

"A New Teaching Tool"

AVID of Indiana

1951

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Low Power FM Radio

A New Teaching Tool

Presenting the Advantages, Uses, and Costs of a 10-Watt FM (Frequency Modulation) Radio Broadcasting Station in Any School System with Procedures for Making Application to the Federal Communications Commission

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Prepared and Distributed by the
Audio-Visual Instruction Directors (AVID)
of Indiana

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MARCH 1951

Introduction

To promote and extend the use of radio as a teaching tool, the Audio-Visual Instruction Directors (AVID) of Indiana, in the fall meeting, September 29-30, 1950, on the campus of Indiana University, went on record as urging the inclusion of radio in the audio-visual program. Recognizing the opportunities offered by low power FM broadcasting and the fact that a school system can provide a radio station and receiving facilities for a cost comparable with that of equipping for motion picture utilization, AVID feels that this study is significant. This brochure, representing the experiences and plans of AVID members, and distributed as a service of AVID, presents some of the facts and opinions concerning educational radio for administrators, audio-visual directors, and teachers.

Philosophy Of Low Power FM Educational Radio

Through the combined efforts of the U. S. Office of Education, the Federal Communications Commission, the National Association of Educational Broadcasters, and numerous school administrators who wished to make extensive use of radio, the 10-watt educational transmitter was developed and made available for non-commercial use. Schools for more than a quarter of a century have owned and used their own radio voices, but in most instances these stations were limited to metropolitan areas, due chiefly to the expense of costly equipment and trained personnel. These stations are to be complimented on the excellent work they have carried on during the period when most educators rejected radio as a teaching tool.

Since these transmitters have had to serve large metropolitan areas, their programs have had to be of professional quality; consequently they have found it necessary to eliminate one very important element of the educational process—pupil participation. Many think that their programs have consisted of too high percentage of "verbalism". They have been lecturing to the student in the classroom through the medium of dramatized educational transcribed radio shows. The boys and

girls have not had a fair share of the total time to use their initiative and abilities in producing and participating in their own shows. These stations must not be criticized for this condition, however. With one transmitter for each million boys and girls, the thought of getting even one-tenth of one per-cent of the student population on the air is quite a staggering problem. The students have had to be content with "just listening activities". This is only one phase of the educational process.

The other and very important part is PUPIL PARTICIPATION IN PRODUCTION. Schools today are striving to become examples of democracy. We have far too many people in the educational field now who use their own vocal cords too much, and administrators for years have tried to remedy the situation with not too much success. For the sake of democracy in education, let us not start down this same road when we "go on the air".

What is the answer? At the present time, there are many concrete examples of 10-watt FM stations that are fast approaching the 50-50 division between live and transcribed programs. Grade levels seem to make little difference. Elementary schools, junior highs, senior highs, and colleges and universities are now on the air with workshop students at the controls, doing the announcing, writing and producing their own shows, using their fellow student from grades one through sixteen as radio talent. MANY STUDENT-PRODUCED SHOWS ARE BEING ACCEPTED BY TEACHERS FOR CLASSROOM USE. In most instances the professional staff has had little or no formal training in radio. In the great majority of cases the production is supervised by a former speech teacher, and the equipment care and operator training is a responsibility of the director of audio-visual instruction, or some other person who has a fair degree of technical ability and former administrative experience.

These stations carry the thousands of excellent university-produced transcribed programs. They get a high percentage of their student body on the air, follow their teams to the state basketball tourneys, and DO IT USING STUDENT TALENT.

The superintendents and school boards are happy. Students and parents love it. Their budgets are unbelieveably small. Who is left to object to this new teaching tool being used in this democratic manner?

Getting The Low Power FM Station

1. OFFICIAL PROCEDURE

a. School board approval of filing of application with the Federal Communications Commission (FCC). It is necessary to have the legal unit, THE SCHOOL CITY, authorize the action. Since this procedure takes some time, it should be done early. Even though completion may be several months away, the filing of the application stimulates school and community interest.

b. Application for Construction Permit (CP). This permit describes the kind of equipment, details of location of transmitter, and approximate costs.

c. Granting of Construction Permit. When notified by the FCC of action on the application, the applicant has 8 months to complete the installation. This time may be extended, if necessary.

d. Installing Equipment. The equipment must be installed according to the CP. If changes in equipment are found desirable, application is made to modify the CP. Commercial radio stations usually are glad to cooperate and offer help.

e. Equipment Tests. The FCC engineer in the area and the Washington office are merely notified 2 days in advance that tests will be made. This covers a period not to exceed 30 days.

f. Program Tests. This notification is similar to the Equipment Tests, and the tests may continue for 30 days, or until license is granted.

g. Application for Station License. Application is made after equipment has been installed and tested.

h. Granting of License by FCC. The license is granted for an initial period which expires June 1 or September 1, accordng to frequencies. Renewals are for three years.

i. Third Class Radiotelephone Operator Permits. This type of radiotelephone operator permit has been provided by the FCC for operation of 10-watt stations. The FCC exam can be passed by teachers or high school pupils on the basis of a few days' study. Questions and answers such as included in the examination are made available by the FCC for study. The material is nontechnical and includes only a knowledge of broadcast law and operating practice. A first or second class operator, having technical knowledge, must be available for technical service, but not for operation.

2. EQUIPMENT REQUIRED

a. Ten-Watt Transmitter and Antenna. There are at least four companies offering this equipment. The transmitter costs approximately $1500. The antenna costs $100 or more, depending upon the mast used.

b. Console for Control Room. The console can be simple for one studio, or more compilcated for more than one studio, with costs between $500 and $1500.

c. Studio Equipment. Much audio equipment of the Audio-Visual Department can be used. The amount of studio equipment needed will depend upon the program planned. Certain minimum items will include:

2 or more microphones
2 turntables
Tape recorder
Sound effects
Transcriptions and records

3. STUDIO FACILITIES

a. Control Room. A small room is adequate to house the transmitter and console. Windows must be in the wall between the control room and studio.

b. Studio. A small room, sound treated, must adjoin the control room. Larger facilities offer more flexible programming.

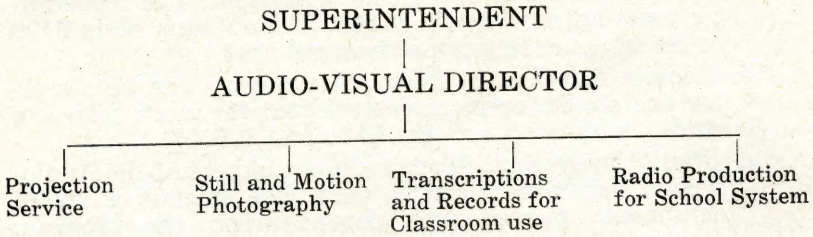
c. Remote Locations. Larger groups may be picked up by a remote line to auditorium stage, gym, or other locations.

Administration Of School Radio

Because radio is definately an audio aid in instruction, in many instances school administrators in public school systems have placed the administrative responsibility for the low power FM radio station in the department of audio-visual instruction. Such an allociation of responsibility may be due to the fact that the audio-visual department has already provided services making use of such audio equipment that can also serve to advantage in the radio installation, as microphones and tape and disc recorders. Unless viewed as a coordinated effort, serving the entire school system as an audio aid, radio may become simply a highly specialized activity for one department, with no attempt at coordination with the general instructional program.

Actual production of radio programs can be within one or more departments, just as the visual field has frequently included the science departments, the vocational department, art and photography classes, and others.

In situations where there has been an effective audio-visual program, we recommend the following possible concept of administration.



Program Production

Program production on low power FM educational stations aims primarily at usefulness for schools, but it also takes into consideration the acquisition and holding of community audience and service to all local citizens. Production encourages and demands articulate, flexible, pleasant diction, exact timing, and a variety of abilities for those who participate. Experience of schools with low power FM stations show that pupils are capable of and successful in achieving excellent production, and that participation serves as an incentive for improvement. Since the educational radio program must have appeal for many different groups, production can include a variety of types, such as the following:

1. Our Schools—Participation of small groups from various schools discussing the physical and educational aspects of the individual building in an effort to develop pride in school and to inform other schools and the community.
2. Discussion—Classroom group in round-table discussion of political, economic, and social questions, serving as a review of units studied and as material for other classes and the community.
3. Junior Town Meetings—Carrying out this popular form of inter-school activity to emphasize the importance of free discussion in a democracy.
4. Dramatizations—Stories and events presented for different school levels for classroom enrichment, and for experience for workshop students in skills of sound and transition.
5. Transcriptions—Presenting professionally produced educational programs for classroom utilization. In this manner the local school can benefit from the radio activities of universities and other groups.
6. Achievement Programs—Spelling contests, quiz programs, music programs by school groups and individual pupils.

7. Special Broadcasts—Athletic contests, commencements, and community programs.

8. Emergencies—Catastrophe service and war emergencies.

Radio Utilization

The success of the school-owned radio station depends to a great extent upon the use made of the materials broadcast.

To get the most from the broadcast efforts, it is necessary to take into account the types of listening audience one expects to reach. In the case of the local school station this audience consists of either the students in the classrooms or the people of the community, or both.

In the classroom, the radio broadcasts are effective as a direct teaching aid in which the emphasis is placed either upon participation or upon the dissemination of information.

In program participation, utilization is dependent upon the student's development of confidence in himself and his ability to transmit intelligent verbal ideas. The student is required to develop a cooperative attitude toward all who share the program with him. He is further urged to carefully evaluate and weigh all material used in the broadcasts.

The second phrase of direct teaching is the dissemination of factual information. Several of our educational institutions have available a number of transcribed radio programs designed for classroom teaching. These programs are carefully checked as to content and form. There are study guides available for many of these programs, thus giving the teacher the chance to prepare the class for the broadcast as well as to provide suggestions for follow-up discussions.

We must, by all means, include the people of the community in our program planning and utilization. The lower power FM station is one of the most effective public relations media the school has ever had at its command. Not only are the public school and its activities taken directly into the homes of the local citizens, but the citizens can be made to feel a part of the school itself by participating in actual broadcast. P. T. A.' s, service clubs, and other community organizations participating in actual broadcasts will begin to consider the school as a focal point for all community activity.

THE NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS

The cost of operation of an educational FM station operated by students under the supervision of teachers is extremely low. The stations are receiving weekly from numerous sources fifteen to twenty hours of radio broadcast programs on magnetic tape. Some programs are recorded by leading universities. These programs originally were broadcast over the university stations and were designed especially for classroom listening. The radio stations of most of the large city systems have agreed to make their programs available for the smaller stations' use. Free programs from non-profit and commercial organizations are listened to by the classrooms. Those sponsored by the commercial organizations have no objectionable continuity. An increasing number of network programs and individual station programs are being freed for non commercial use. This enormous source of material enables the station to stay on the air while good local programs are being planned and built.

The National Association of Educational Broadcasters is a nation wide organization whose membership lists practically all of the educational stations of the nation. The membership dues for the 10 watt station is only fifteen dollars. The National Association of Educational Broadcasters operates a tape recording project which mass duplicates hundreds of evaluated radio broadcasts and mails them out for a very small fee to its member stations. The N. A. E. B. at present is furnishing about fifteen hours of the finest program material to its member stations weekly. Under a special grant of the Kellogg Foundation special mass duplicating equipment is being set up at the University of Illinois and an ever increasing supply of radio programs can be expected from this organization. The cost to the 10 watt station during the school year of 1951-52 will be less than one hundred dollars including postage.

Summary

1. PHILOSOPHY OF LOW POWER FM RADIO—It is Democracy in action, providing a multitude of opportunities for pupils to participate in programs, not merely to listen to them.

2. GETTING THE LOW POWER FM STATION.—Procedures are exact, but not difficult, in obtaining the necessary consent of the Federal Communications Commission for a construction permit and a station license, with several actions of the Commission taken for the expressed purpose of encouraging the widespread use of the 10-watt station by schools. The cost is within the realm of even comparatively small school systems, with $3,000 a reasonable minimum for station installation.

3. ADMINISTRATION OF THE SCHOOL RADIO—In many instances it has seemed desirable to place the low power radio station in the audio-visual department to make the station a real audio aid in instruction throughout the entire school system.

4. PROGRAM PRODUCTIONS—A variety of program possibilites offer stimulation for achievement by pupils, the development of skills in broadcasting techniques, and the broadcasting of special school and community programs.

5. RADIO UTILIZATION—The school radio becomes an important aid in the classroom and a most useful medium for community groups.

6. NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS—Any educational organization planning to build a low power station should write to the N. A. E. B. Recording Project, Gregory Hall, University of Illinois and get information concerning the services of the organization. It is a valuable source of necessary material for the small stations.

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